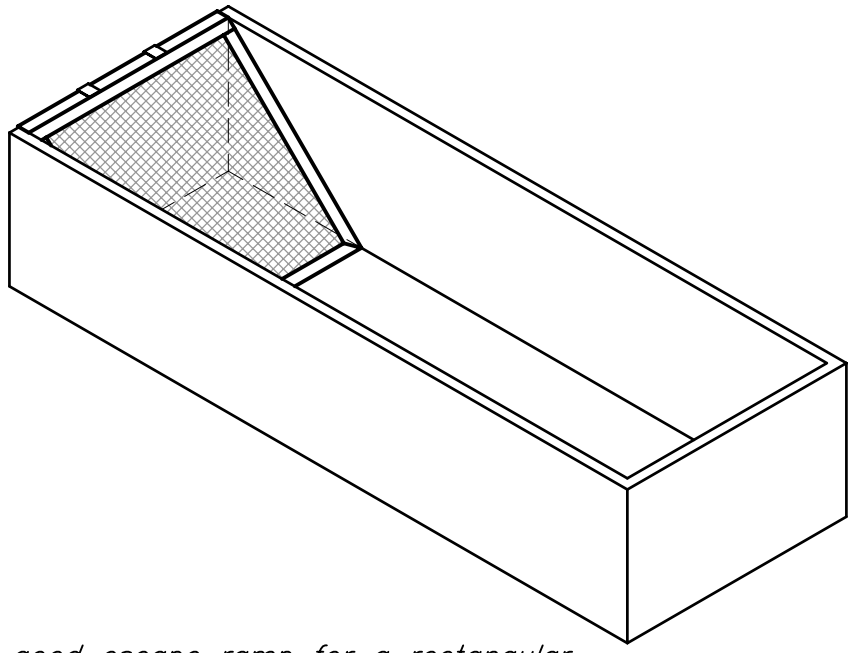
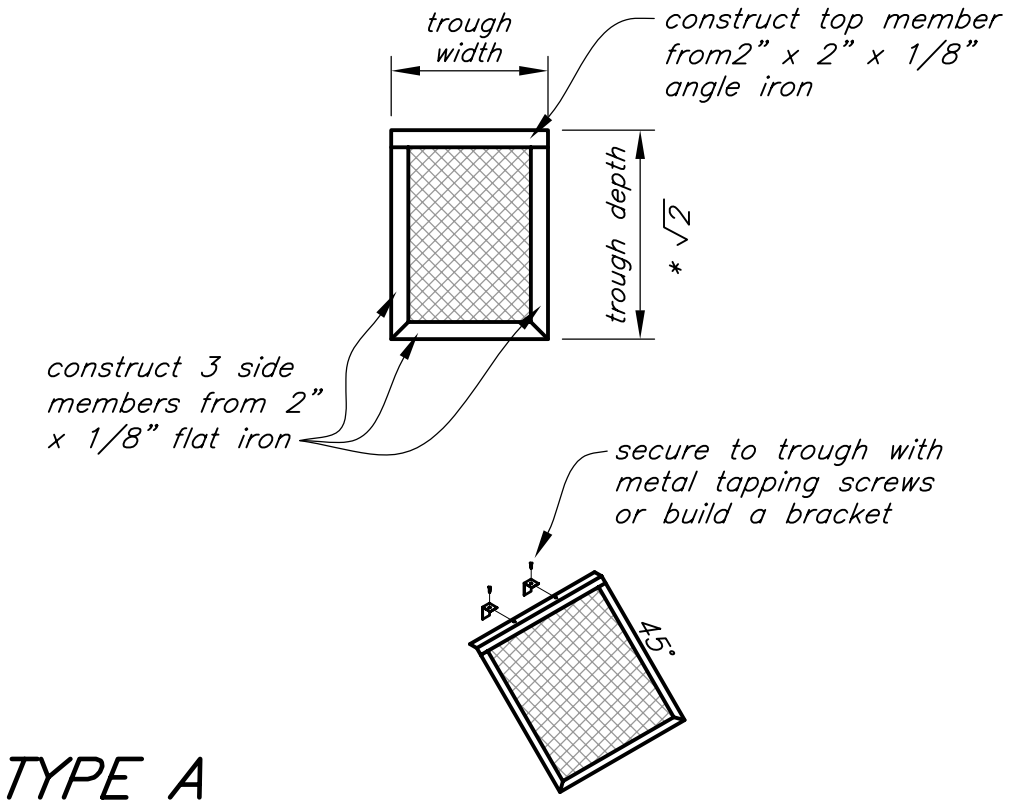
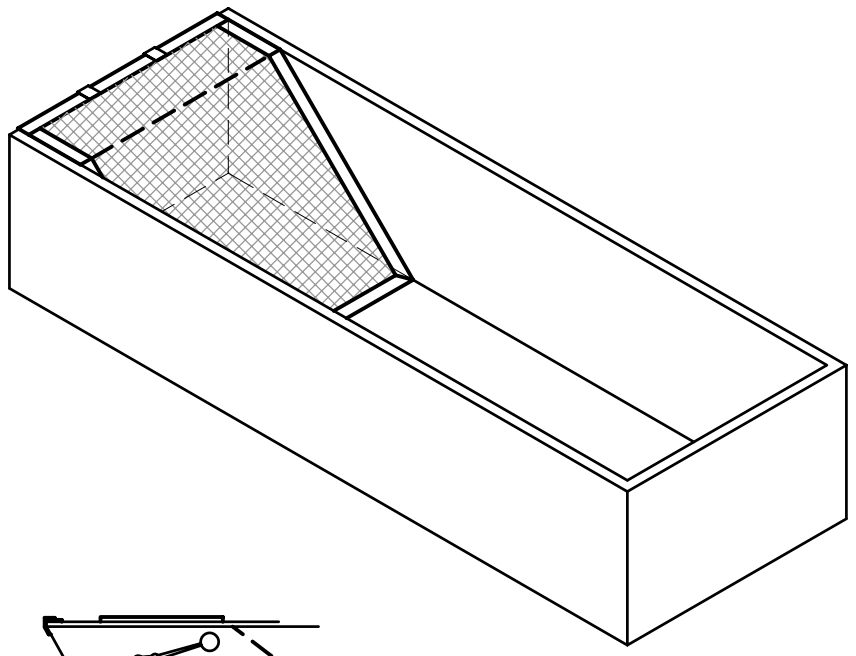
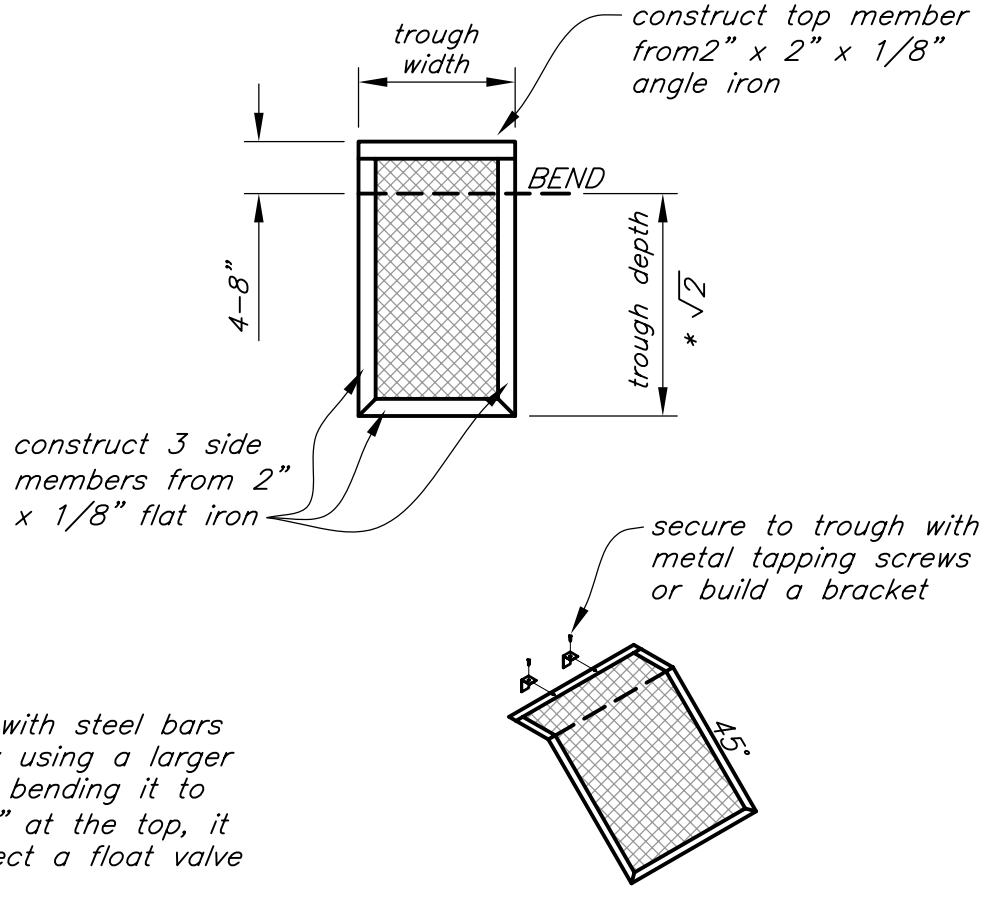


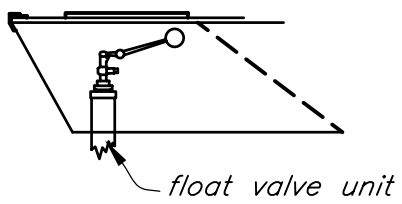
A good escape ramp for a rectangular trough is simply an appropriately sized panel of expanded–metal grating that spans the width of the trough at one end and slants from the top of the rim to the bottom.



TYPE A







SIDE VIEW

It can be reinforced with steel bars along the edges. By using a larger piece of grating and bending it to provide a flat "cover" at the top, it can be used to protect a float valve or other plumbing.

TYPE B

GUIDELINES

Escape structure shall extend down into the water and meet the inside wall of the trough so animals swimming along the perimeter will find the structure, rather than becoming trapped behind or beneath it or missing it entirely.

Escape structure shall reach to the bottom of the trough, so as to be effective even if the water level drops sharply.

Escape structures shall have a slope no steeper than 45 degrees, on all sides, to allow animals to climb out without slipping back into the water.

Escape structure shall be firmly secured to the trough rim so it will not be knocked loose by livestock or other animals.

Escape structure shall be built of grippable, long lasting materials, such as painted or coated metal grating, concrete, rock and mortar or high–strength plastic composites.

Expandable metal escape structures shall be 13 or 11–gauge with 1/2 inch mesh and shall be finished with a rust–inhibiting paint or coating.

Escape structures must be firmly attached to the trough rim. A metal–tapping screw and washer is simple and effective, or a bracket with a bolt and wing nut can be made or purchased to allow easier removal for trough maintenance. Secure attachment keeps the ramp from being knocked loose by stock or freezing water. The structure can be reinforced by welding a steel strap to the bottom of the mesh at the attachment point where it folds of the trough rim. The strap should be the same width as the ramp and extend at least 6 inches down the slope.

Concrete escape structures are built in much the same way, using concrete mixed on–site and poured into a plywood mold to produce a concrete block that slopes from the rim to bottom. Rebar is needed to strengthen the concrete in larger ramps.

REFERENCES:

Water for Wildlife, a Handbook for Ranchers and Range Managers, Bat Conservation International

Wildlife Watering and Escape Ramps on Livestock Water Developments: Suggestions and Recommendations, Idaho BLM Technical bulletin

Drawing not to scale.

Date
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RECTANGULAR TROUGH ESCAPE STRUCTURES

NRCS Natural Resources Conservation Service
United States Department of Agriculture

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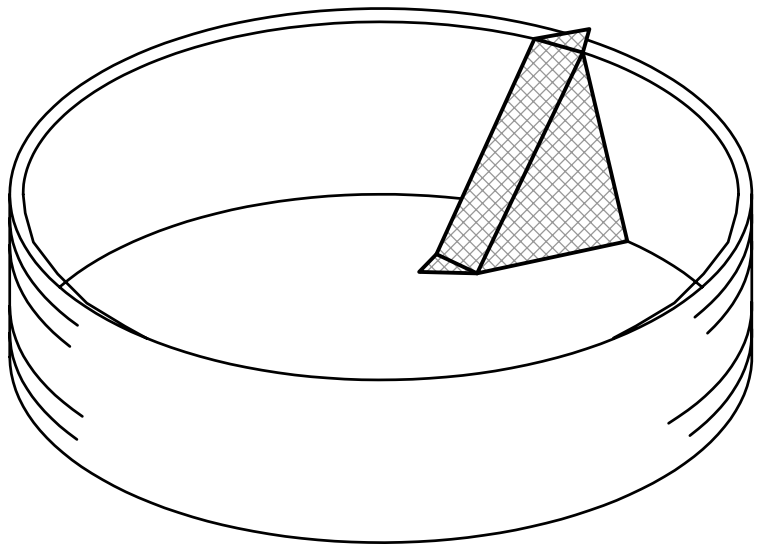
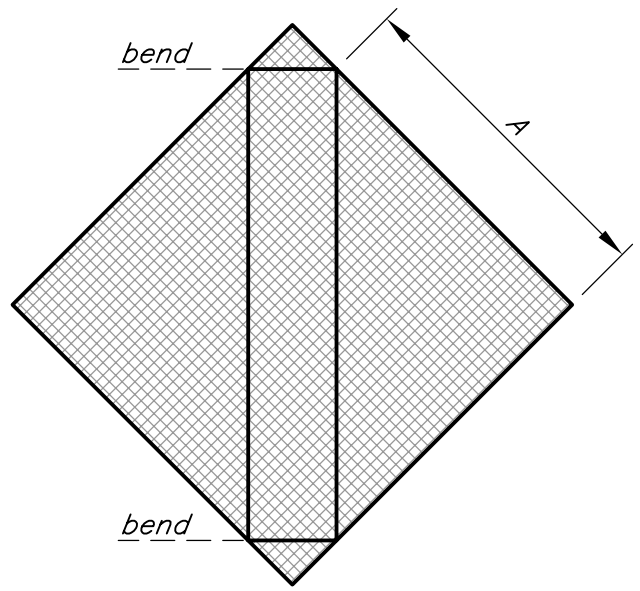
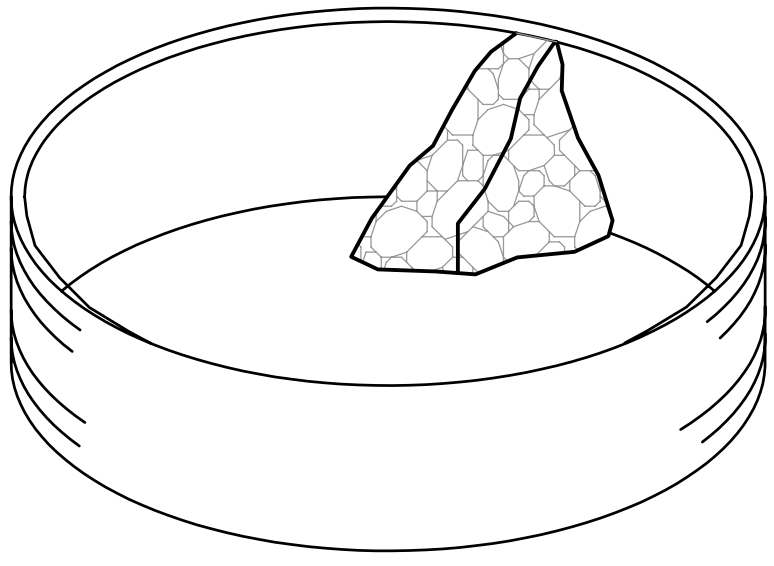


Expanded metal grating (with 1/2 mesh) is an effective wildlife escape structure. Use cutting diagram, as shown on this sheet, with the length (A) matching thedepth of the trough. The top corner bends over the rim of the trough and is attached with screws or bolts.



CUTTING AND BENDING DIAGRAM



Rough-surfaced stones firmly set in mortar to form a slanting, top-to-botoom ramp flush with the side of the trough produce an durable escape structure. Concrete poured into plywood forms results in a similar structure.

GUIDELINES

Escape structure shall extend down into the water and meet the inside wall of the trough so animals swimming along the perimeter will find the structure, rather than becoming trapped behind or beneath it or missing it entirely.

Escape structure shall reach to the bottom of the trough, so as to be effective even if the water level drops sharply.

Escape structures shall have a slope no steeper than 45 degrees, on all sides, to allow animals to climb out without slipping back into the water.

Escape structure shall be firmly secured to the trough rim so it will not be knocked loose by livestock or other animals.

Escape structure shall be built of grippable, long lasting materials, such as painted or coated metal grating, concrete, rock and mortar or high-strength plastic composites.

Expandable metal escape structures shall be 13 or 11-gauge with 1/2 inch mesh and shall be finished with a rust-inhibiting paint or coating.

Escape structures must be firmly attached to the trough rim. A metal-tapping screw and washer is simple and effective, or a bracket with a bolt and wing nut can be made or purchased to allow easier removal for trough maintenance. Secure attachment keeps the ramp from being knocked loose by stock or freezing water. The structure can be reinforced by welding a steel strap to the bottom of the mesh at the attachment point where it folds of the trough rim. The strap should be the same width as the ramp and extend at least 6 inches down the slope.

Concrete escape structures are built in much the same way, using concrete mixed on-site and poured into a plywood mold to produce a concrete block that slopes from the rim to bottom. Rebar is needed to strengthen the concrete in larger ramps.

REFERENCES:

Water for Wildlife, a Handbook for Ranchers and Range Managers, Bat Conservation International

Wildlife Watering and Escape Ramps on Livestock Water Developments: Suggestions and Recommendations, Idaho BLM Technical bulletin

Drawing not to scale.

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CIRCULAR TROUGH
ESCAPE STRUCTURES

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

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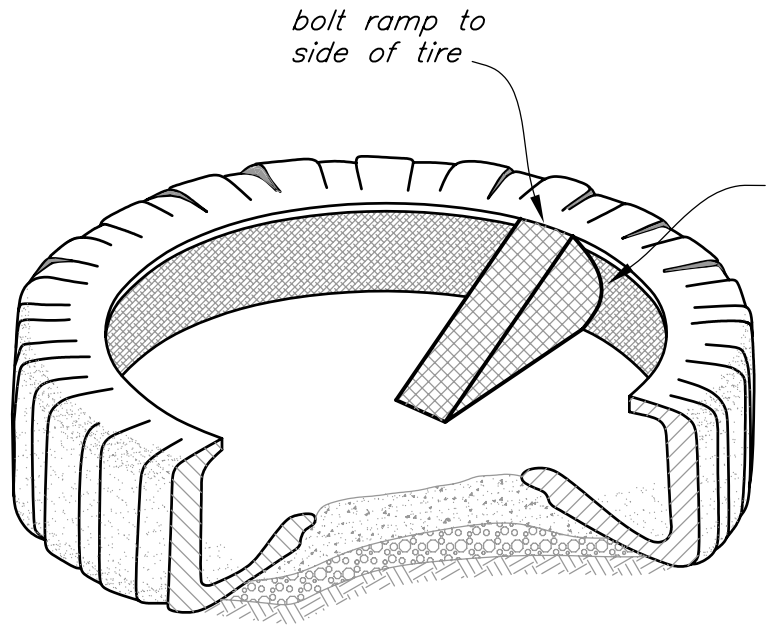

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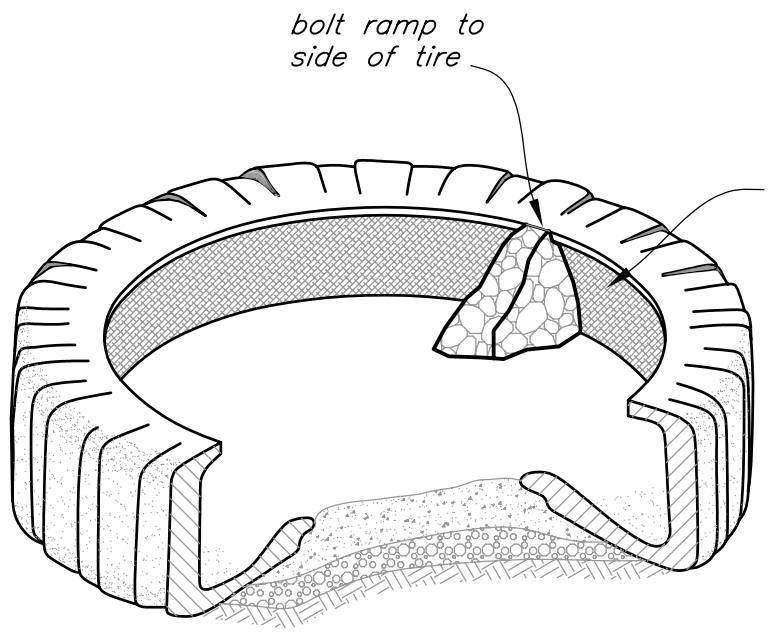

Rough-surfaced stones firmly set in mortar to form a slanting, top-to-botoom ramp flush with the side of the trough produce an durable escape structure. Concrete poured into plywood forms results in a similar structure.

GUIDELINES

Escape structure shall extend down into the water and meet the inside wall of the trough so animals swimming along the perimeter will find the structure, rather than becoming trapped behind or beneath it or missing it entirely.

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TIRE TROUGH
ESCAPE STRUCTURES

NRCS Natural Resources Conservation Service

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